

Search query (13): [SP]: priority[0001] this application claims the benefit of and priority to u.s. provisional application, entitled "tamper evidence bridges," filed on feb. 2, 2016 and having application ser. no. 62/290,434.field[0002] the field of the present disclosure generally relates to plastic bottles and preforms. more particularly, the field of the invention relates to a tamper evidence bridge that provides a visible indication about whether or not a manufacturer installed container cap has been previous removed.background[0003] plastic containers have been used as a replacement for glass or metal containers in the packaging of beverages for several decades. the most common plastic used in making beverage containers today is polyethylene terephthalate (pet). containers made of pet are transparent, thin walled, and have the ability to maintain their shape by withstanding the force exerted on the walls of the container by their contents. pet resins are also reasonably priced and easy to process. pet bottles are generally made by a process that includes the blow-molding of plastic preforms which have been made by injection molding of the pet resin.[0004] advantages of plastic packaging include lighter weight and decreased breakage as compared to glass, and lower costs overall when taking both production and transportation into account. although plastic packaging is lighter in weight than glass, there is still great interest in creating the lightest possible plastic packaging so as to maximize the cost savings in both transportation and manufacturing by making and using containers that contain less plastic.[0005] fig. 1 illustrates a lower perspective view of an exemplary container 100 typically used for storing liquid contents, and particularly carbonated contents. the container 100 comprises a base 104 that extends up to a grip portion 108. in some embodiments, the base 104 may be of the petaloid variety, although other configurations of the base may be incorporated into the container 100, without limitation. the grip portion 108 comprises a generally smooth, cylindrical portion of the container 100 suitable for affixing a label, as well as providing a location for grasping the container. in some embodiments, the grip portion 108 may comprise one or more sidewall ribs that generally may vary in depth, and may swirl or angulate around the grip portion 108. additional configurations of the grip portion 108 are disclosed in u.s. patent application, entitled "plastic container with strapped base," filed on jan. 16, 2014, having application ser. no. 14/157,400, the entirety of which application is incorporated by reference herein.[0006] in the illustrated embodiment, the grip portion 108 transitions into a shoulder 124, which connects to a bell 128. although the bell 128 illustrated in fig. 1 is smooth and generally unornamented, in other embodiments the bell may include design features, such as, by way of non-limiting example, a plurality of scallops. the bell 128 connects to a neck 136, which connects to a finish 140. as shown in fig. 1, the bell 128 comprises a diameter that generally decreases as the bell 128 extends upward from the shoulder 124 to the neck 136 and the finish 140. the finish 140 may be adapted to receive a closure to seal contents in the container 100, such as, by way of non-limiting example, a container cap 164 or a bottle cap. the finish 140 generally defines an opening that leads to an interior of the container 100 for containing a beverage, or other contents. the finish 140 may be of the carbonated soft drink (csd) variety, or may be configured to receive container caps suitable for sealing noncarbonated contents within the interior of the container 100.[0007] fig. 2 illustrates an upper perspective view of an exemplary finish 140 that is configured to rotatably engage with the container cap 164 so as to seal contents within the interior of the container 100. the finish 140 comprises a cylindrical body 148 that includes a peripheral portion with a first edge 152 and a second edge 156 disposed at opposite ends. the first edge 152 defines an opening 160 and is configured to receive a plug seal 168, as shown in fig. 3 within the container cap 164, as disclosed herein. the second edge 156 is configured to receive the neck 136 of the container 100, as shown in figs. 1 and 2, such that the opening 160 is in fluid communication with the interior of the container 100 once the finish 140 is installed thereon.[0008] an exterior of the cylindrical body 148 comprises one or more threads 172 that are configured to rotatably engage with one or more threads 176 of the container cap 164. an engagement of the threads 172 of the finish 140 with the threads 176 of the container cap 164 is best shown in fig. 3. as shown in fig. 2, a plurality of gaps 174 may be disposed in the threads 172 and positioned uniformly around the perimeter of the cylindrical body 148. preferably, the gaps 174 of adjacent threads 172 are vertically aligned so as to form channels 178 extending longitudinally along the finish 140. the channels 178 advantageously operate to relieve pressure within the container 100 when the container cap 164 is loosened. as will be appreciated, the channels 178 may provide a direct route for gases escaping the interior of the container 100, rather than the gases being forced to travel around the finish between adjacent threads 172.[0009] in the embodiment illustrated in fig. 1, the container cap 164 comprises a tamper evidence band 166 that is disposed around the perimeter of the finish 140. the tamper evidence band 166 is attached to the container cap 164 by a multiplicity of thin connections. a neck ring 170, best shown in fig. 2, generally comprises a rounded upper portion configured to facilitate passing the tamper evidence band 166 over the neck ring 170 during assembly of the cap 164 onto the container 100. a flat lower portion of the neck ring 170 retains the tamper evidence band 166 positioned below the neck ring 170 during loosening of the cap. for example, when an end-user later loosens the container cap 164, the neck ring 170 retains the tamper evidence band 166 positioned below the neck ring 170, breaking the thin connections between tamper evidence band and the cap 164. the tamper evidence band 166 remains positioned below the neck ring 170 after the container cap 164 is removed from the container 100. thus, the tamper evidence band 166 and neck ring 170 cooperate to indicate to the end-user that the cap 164 has not been previously loosened after being installed by the manufacturer.[0010] a drawback to conventional tamper evidence bands, such as the band 166, is that it may be difficult for an end-user to directly observe whether or not the container cap 164 has been previously separated from the tamper evidence band 166 and removed from the container. consequently, the container cap 164 may be separated from the tamper evidence band 166, the container 100 may be refilled, and another container cap may be installed onto the container, giving little visual indication to the end-user that the container 100 has been reused. one solution to this problem has been to make the finish 140 taller so that the second edge 156 is lower, allowing the tamper evidence band 166 to drop once the container cap 164 has been separated from the container 100. unfortunately, making the finish 140 taller generally adds unwanted weight to the container 100. moreover, in some instances the tamper evidence band 166 may be removed from the finish 140 and a new container cap 164 may be placed onto the container 100, leaving a consumer with essentially no evidence that the container 100 had been previous opened.[0011] another drawback to conventional tamper evidence bands 166 is that the container cap 164 generally must be screwed onto the finish 140 by way of a chuck. a solution to this drawback has been to merely push the container cap onto the finish 140, such that the threads 176 snap onto the threads 172 and the tamper evidence band 166 is retained below the neck ring 170. a drawback to pushing the container cap 164 onto the finish 140 is that snapping the threads 172, 176 together typically requires the threads 172, 176 to be short enough to allow internal pressure within the container to push the container cap off the finish. as will be recognized, such an internal pressure may be due to heat, dissolved gas, or even due to a consumer squeezing the bottle.[0012] what is needed, therefore, is a tamper evidence bridge that provides a visible indication about whether or not a manufacturer installed container cap has been previously removed. further, there is a need for a reduction of turbulence in liquid contents during pushing the container cap onto the finish during manufacturing as well as a design that resists being pushed off the bottle by internal pressure.summary[0013] an apparatus and a

Results: 23

Search history

Search tamper and closure and (bottle or container) and seal and evidence (Results 1950)

1:

Search IC=(E014F15/18) (Results 0)

2:

Search IC=(E04F15/18) (Results 14494)

3:

Search IC=(E01B9/68) (Results 2365)

4:

Search IC=(E01B19/00) (Results 4245)

5:

Search 1 AND 3 (Results 0)

6:

Search 1 AND 4 (Results 0)

7:

Search 1 AND 5 (Results 0)

8:

Search 3 AND 4 AND 5 (Results 1)

9:

Search [SP]: this invention relates to a container closure assembly comprising a container neck and a complementary closure. in particular, the invention relates to such an assembly in which the neck is adapted to carry a sealing web, e.g. a foil seal.foil sealed containers are used for a variety of different purposes, particular examples being medicine bottles, coffee jars and drinks containers. commonly, they are used in applications in which the contents of the container are consumed or exhausted over a fixed or well-defined period of time. in such cases, the foil seal provides that the contents of the container remain uncontaminated, or that they retain their original quality, until the foil seal is broken. a secondary seal, between the container and its complementary closure ensures a degree of protection for the contents of the container which is sufficient to preserve the quality of the contents throughout its consumption or usage period.it has been common practice for the secondary seal to be provided between the lip of the container neck and the crown of the closure, which has the effect of sandwiching the foil seal between the two. overtightening of the closure can tear or rupture the delicate foil seal.this invention seeks to overcome this problem, and accordingly provides a container closure assembly comprising a container neck, a container closure and a thread for retaining

the closure on the container neck, wherein the inner surface of a skirt portion of the closure is adapted to seal against the outer surface of the container neck. with the above arrangement, the secondary seal remains entirely clear of the lip of the container neck, and therefore of any foil seal or other sealing web which may be provided thereon. for additional protection of the sealing web, the assembly may be such that, when the closure is engaged with and sealed to the container neck, a clearance exists between the outer surface of the lip of the container neck and the corresponding inner surface of the closure. the invention also provides a container closure assembly comprising a container neck, a container closure and means for retaining the closure on the container neck, wherein the inner surface of a skirt portion of the closure is adapted to seal against the outer surface of the container neck and, when the closure is engaged with and sealed to the container neck, a clearance exists between the outer surface of the lip of the neck and the corresponding inner surface of the closure. this clearance may be afforded by providing the outer surface of the lip with a recess. preferably, the recess includes a substantially outwardly facing surface which is inclined to the longitudinal axis of the container neck so as to form an overhanging rim on the container. preferably the inclination of the recess surface is between about 1 deg and about 45 deg, preferably about 20 deg. preferably, the container neck includes an outwardly tapered portion and the inner surface of the skirt portion of the closure is adapted to form an interference fit with that tapered portion. this will ensure that no contact, other than accidental contact, occurs between the closure and the lip of the container neck, or any sealing web thereon, during application or tightening of the closure. the skirt portion of the closure can be made large enough to pass over the relatively narrow lip of the container neck and only seal with the neck in a region where the tapered portion is wider. to provide a good seal, the skirt portion of the closure preferably includes an inwardly tapered surface so as to correspond to the tapered neck. preferably, the angle of taper is between about 1 deg and about 45 deg, most preferably about 1 deg and about 25 deg, and in particular about 5 deg. in a case where the container neck and closure are of circular section, the means for retaining the closure on the neck preferably includes a thread. most preferably a thread is provided on the closure and a complementary thread on the container neck. alternatively, the skirt portion of the closure may be provided with an inwardly facing deformable projection to engage a complementary outwardly facing projection on the neck. this provides a snap fit closure. preferably, the projections comprise one or more outstanding beads. the invention also provides a container neck, adapted to receive a complementary closure and having a sealing web sealed thereto, in which at least a circumferential portion of an outer edge of the lip of the container neck is cut away. this provides that the part of the sealing web which overlies the cut away edge may be used as a pull away tab for the web. such an arrangement is particularly useful for webs which are adapted to be peeled off. preferably the sealing web is at most coextensive with the lip of the container neck. thus, when the closure is applied, the sealing web is not fouled by the closure. the cut away edge of the lip may be chamfered, and the container neck, with or without the sealing web may form part of a closure assembly according to the invention. the invention will now be described by way of example with reference to the accompanying drawing wherein: fig. 1 is a section through a first embodiment of the invention including a threaded closure. fig. 2 is a section through a second embodiment, in which the closure snaps onto the container neck and fig. 3 is a section through the embodiment of fig. 2, the lip of which has a chamfered edge. fig. 1 illustrates a container closure assembly according to the invention including a container neck (10) and a container closure (12). the closure (12) is illustrated in its engaged, sealed position on the container neck (10). in this exemplary embodiment both the neck (10) and the closure (12) are of circular section and are provided with complementary threads (14, 16). the closure consists of a crown portion (120) and a skirt portion (122). the skirt portion (122) includes an inwardly tapered surface (20) and the container neck (10) includes a corresponding outwardly tapered surface (18). a seal (22) exists between the tapered surfaces (18, 20) by virtue of an interference fit between the two. the lip (30) of the container neck (10) is sealed by a sealing web (28) which, in this exemplary embodiment is a foil seal. the neck (10) and closure (12) are constructed of materials common in the art, e.g. glass, plastics, metal etc. as can be seen a clearance (24) exists between the outer surface (26) of the lip (30) and the inner surface of the closure (12). the clearance is of about 1mm and corresponds to a recess (32) in the lip (30). as can be seen, the closure is held away from the edges of the foil seal, to reduce the likelihood of tearing the seal. whilst in the embodiment shown in fig. 1 the clearance (24) is afforded by a recess (32) in the lip (30), it will be appreciated by one skilled in the art that such a clearance may be provided by an appropriate profile on the inner surface of the closure (12), or a combination of profiles on the closure (12) and the neck (10). the recess (32) includes a substantially outwardly facing surface (26) which tapers inwardly away from the open end of the lip. this forms a drip-free, overhanging rim. the diameter of the inside surfaces of the closure threads (16) is greater than that of the sealing web or foil (28). the complementary threads (14, 16) may therefore be engaged without any portion of the closure (12) contacting the sealing web (28). rotation of the closure (12) advances it axially until its tapered surface (20) interferes with that (18) on the neck (10). no stress is applied to the sealing web (28). the secondary seal (22) between the tapered surfaces (18, 20) has been found in shelf tests to be, for practical purposes, of equal integrity to the foil seal itself. this offers a substantial improvement over the prior art. a container closure assembly according to this, or any other embodiment of the invention may for example be applied to the container and closure which forms the subject of our international patent application pct gb91/00850. fig. 2 illustrates an assembly similar to that shown in fig. 1, but which includes a snap-fit closure. the closure (12) is, in this embodiment, formed of deformable plastics material. its skirt portion (122) is provided with an inwardly facing outstanding bead (52) which cooperates with an outstanding projection (50) on the container neck. once again, tapered surfaces (18, 20) are provided on the neck and closure to provide an interference seal (22). the outer surface of the container lip (30) is again provided with a recess (32) which is, practically, identical to the recess shown in fig. 1. the inside diameter of the bead (52) is greater than the diameter of the sealing web (28). as can be seen, the foil is of a larger diameter than is the recessed container lip so as to provide an overhanging edge of foil to facilitate the removal of the foil. nevertheless, the foil diameter is not so large that the foil makes contact with the inner surface of the cap. fig. 3 shows the embodiment of fig. 2 an edge (66) of the lip (30) of which is chamfered. the chamfer results in an inclined surface (62) which creates a space (64) beneath a peripheral portion (60) of the web (28). this peripheral portion (60) performs the function of a pull tab on the web (28). and is particularly useful when the web (28) is adapted to be peeled off the container lip (30). of course, the web (28) is still fully sealed to the horizontal surfaces of the lip (30). it will of course be appreciated that the invention has been described above purely by way of example and that modifications of detail may be made without departing from its scope. (Results 0)

Search 11: PN=(WO2017136590) (Results 1)

Search 12: [SP]: 1. a container configured to provide highly visible evidence of having been opened by other than a manufacturer of the container, comprising: a base extending upward to a sidewall of the container a shoulder connected between the sidewall and a bell, a diameter of the bell decreasing as the bell extends upward to a neck of the container a finish connected to the neck and configured to receive a container cap, the finish comprising a neck ring and defining an opening to an interior of the container wherein the container cap is comprised of a multiplicity of scales that are uniformly disposed around the circumference of the bottom-most edge of the container cap and are engagedly coupled with a similar multiplicity of ramps extending from the upper-most surface of the neck ring, and wherein a bridge couples an end of each of the multiplicity of scales with the container cap and at least one tamper evidence bridge coupled with the container cap and the neck ring, the at least one tamper evidence bridge being configured to break when the container cap is rotated relative to the finish. 2. a container configured to provide highly visible evidence of having been opened by other than a manufacturer of the container, comprising: a base extending upward to a sidewall of the container a shoulder connected between the sidewall and a bell, a diameter of the bell decreasing as the bell extends upward to a neck of the container a finish connected to the neck and configured to receive a container cap, the finish comprising a neck ring and defining an opening to an interior of the container wherein the container cap is comprised of a multiplicity of scales that are uniformly disposed around the circumference of the bottom-most edge of the container cap and are engagedly coupled with a similar multiplicity of ramps extending from the upper-most surface of the neck ring, and wherein a bridge couples an end of each of the multiplicity of scales with the container cap wherein each of the multiplicity of scales is comprised of a small tab of material that extends from the bottom-most edge of the container cap in a counterclockwise direction with respect to the top of the container cap, and wherein each of the multiplicity of ramps is comprised of a raised portion of the material extending from an upper-most surface of the neck ring in a clockwise direction with respect to the top of the container cap and at least one tamper evidence bridge coupled with the container cap and the neck ring, the at least one tamper evidence bridge being configured to break when the container cap is rotated relative to the finish. 3. a container configured to provide highly visible evidence of having been opened by other than a manufacturer of the container, comprising: a base extending upward to a sidewall of the container a shoulder connected between the sidewall and a bell, a diameter of the bell decreasing as the bell extends upward to a neck of the container a finish connected to the neck and configured to receive a container cap, the finish comprising a neck ring and defining an opening to an interior of the container wherein the container cap is comprised of a multiplicity of scales that are uniformly disposed around the circumference of the bottom-most edge of the container cap and are engagedly coupled with a similar multiplicity of ramps extending from the upper-most surface of the neck ring, and wherein a bridge couples an end of each of the multiplicity of scales with the container cap wherein each of the multiplicity of scales is comprised of a small tab of material that extends from the bottom-most edge of the container cap in a counterclockwise direction with respect to the top of the container cap, and wherein each of the multiplicity of ramps is comprised of a raised portion of the material extending from an upper-most surface of the neck ring in a clockwise direction with respect to the top of the container cap wherein the multiplicity of ramps is positioned on the neck ring so as to engage with the multiplicity of scales when the container cap is suitably tightened onto the finish and at least one tamper evidence bridge coupled with the container cap and the neck ring, the at least one tamper evidence bridge being configured to break when the container cap is rotated relative to the finish. (Results 0)

Search 13: [SP]: priority[0001] this application claims the benefit of and priority to u.s. provisional application, entitled "tamper evidence bridges," filed on feb. 2, 2016 and having application ser. no. 62/290,434. field[0002] the field of the present disclosure generally relates to plastic bottles and preforms. more particularly, the field of the invention relates to a tamper evidence bridge that provides a visible indication about whether or not a manufacturer installed container cap has been previous removed. background[0003] plastic containers have been used as a replacement for glass or metal containers in the packaging of beverages for several decades. the most common plastic used in making beverage containers today is polyethylene terephthalate (pet). containers made of pet are transparent, thin walled, and have the ability to maintain their shape by withstanding the force exerted on the walls of the container by their contents. pet resins are also reasonably priced and easy to process. pet bottles are generally made by a process that includes the blow-molding of plastic preforms which have been made by injection molding of the pet resin. [0004] advantages of plastic packaging include lighter weight and decreased breakage as compared to glass, and lower costs overall when taking both production and transportation into account. although plastic packaging is lighter in weight than glass, there is still great interest in creating the lightest possible plastic packaging so as to maximize the cost savings in both transportation and manufacturing by making and using containers that contain less plastic. [0005] fig. 1 illustrates a lower perspective view of an exemplary container 100 typically used for storing liquid contents, and particularly carbonated contents. the container 100 comprises a

base 104 that extends up to a grip portion 108. in some embodiments, the base 104 may be of the petaloid variety, although other configurations of the base may be incorporated into the container 100, without limitation. the grip portion 108 comprises a generally smooth, cylindrical portion of the container 100 suitable for affixing a label, as well as providing a location for grasping the container. in some embodiments, the grip portion 108 may comprise one or more sidewall ribs that generally may vary in depth, and may swirl or angulate around the grip portion 108. additional configurations of the grip portion 108 are disclosed in u.s. patent application, entitled "plastic container with strapped base," filed on jan. 16, 2014, having application ser. no. 14/157,400, the entirety of which application is incorporated by reference herein.[0006] in the illustrated embodiment, the grip portion 108 transitions into a shoulder 124, which connects to a bell 128. although the bell 128 illustrated in fig. 1 is smooth and generally unornamented, in other embodiments the bell may include design features, such as, by way of non-limiting example, a plurality of scallops. the bell 128 connects to a neck 136, which connects to a finish 140. as shown in fig. 1, the bell 128 comprises a diameter that generally decreases as the bell 128 extends upward from the shoulder 124 to the neck 136 and the finish 140. the finish 140 may be adapted to receive a closure to seal contents in the container 100, such as, by way of non-limiting example, a container cap 164 or a bottle cap. the finish 140 generally defines an opening that leads to an interior of the container 100 for containing a beverage, or other contents. the finish 140 may be of the carbonated soft drink (csd) variety, or may be configured to receive container caps suitable for sealing noncarbonated contents within the interior of the container 100.[0007] fig. 2 illustrates an upper perspective view of an exemplary finish 140 that is configured to rotatably engage with the container cap 164 so as to seal contents within the interior of the container 100. the finish 140 comprises a cylindrical body 148 that includes a peripheral portion with a first edge 152 and a second edge 156 disposed at opposite ends. the first edge 152 defines an opening 160 and is configured to receive a plug seal 168, as shown in fig. 3 within the container cap 164, as disclosed herein. the second edge 156 is configured to receive the neck 136 of the container 100, as shown in figs. 1 and 2, such that the opening 160 is in fluid communication with the interior of the container 100 once the finish 140 is installed thereon.[0008] an exterior of the cylindrical body 148 comprises one or more threads 172 that are configured to rotatably engage with one or more threads 176 of the container cap 164. an engagement of the threads 172 of the finish 140 with the threads 176 of the container cap 164 is best shown in fig. 3. as shown in fig. 2, a plurality of gaps 174 may be disposed in the threads 172 and positioned uniformly around the perimeter of the cylindrical body 148. preferably, the gaps 174 of adjacent threads 172 are vertically aligned so as to form channels 178 extending longitudinally along the finish 140. the channels 178 advantageously operate to relieve pressure within the container 100 when the container cap 164 is loosened. as will be appreciated, the channels 178 may provide a direct route for gases escaping the interior of the container 100, rather than the gases being forced to travel around the finish between adjacent threads 172.[0009] in the embodiment illustrated in fig. 1, the container cap 164 comprises a tamper evidence band 166 that is disposed around the perimeter of the finish 140. the tamper evidence band 166 is attached to the container cap 164 by a multiplicity of thin connections. a neck ring 170, best shown in fig. 2, generally comprises a rounded upper portion configured to facilitate passing the tamper evidence band 166 over the neck ring 170 during assembly of the cap 164 onto the container 100. a flat lower portion of the neck ring 170 retains the tamper evidence band 166 positioned below the neck ring 170 during loosening of the cap. for example, when an end-user later loosens the container cap 164, the neck ring 170 retains the tamper evidence band 166 positioned below the neck ring 170, breaking the thin connections between tamper evidence band and the cap 164. the tamper evidence band 166 remains positioned below the neck ring 170 after the container cap 164 is removed from the container 100. thus, the tamper evidence band 166 and neck ring 170 cooperate to indicate to the end-user that the cap 164 has not been previously loosened after being installed by the manufacturer.[0010] a drawback to conventional tamper evidence bands, such as the band 166, is that it may be difficult for an end-user to directly observe whether or not the container cap 164 has been previously separated from the tamper evidence band 166 and removed from the container. consequently, the container cap 164 may be separated from the tamper evidence band 166, the container 100 may be refilled, and another container cap may be installed onto the container, giving little visual indication to the end-user that the container 100 has been reused. one solution to this problem has been to make the finish 140 taller so that the second edge 156 is lower, allowing the tamper evidence band 166 to drop once the container cap 164 has been separated from the container 100. unfortunately, making the finish 140 taller generally adds unwanted weight to the container 100. moreover, in some instances the tamper evidence band 166 may be removed from the finish 140 and a new container cap 164 may be placed onto the container 100, leaving a consumer with essentially no evidence that the container 100 had been previously opened.[0011] another drawback to conventional tamper evidence bands 166 is that the container cap 164 generally must be screwed onto the finish 140 by way of a chuck. a solution to this drawback has been to merely push the container cap onto the finish 140, such that the threads 176 snap onto the threads 172 and the tamper evidence band 166 is retained below the neck ring 170. a drawback to pushing the container cap 164 onto the finish 140 is that snapping the threads 172, 176 together typically requires the threads 172, 176 to be short enough to allow internal pressure within the container to push the container cap off the finish. as will be recognized, such an internal pressure may be due to heat, dissolved gas, or even due to a consumer squeezing the bottle.[0012] what is needed, therefore, is a tamper evidence bridge that provides a visible indication about whether or not a manufacturer installed container cap has been previously removed. further, there is a need for a reduction of turbulence in liquid contents during pushing the container cap onto the finish during manufacturing as well as a design that resists being pushed off the bottle by internal pressure.summary[0013] an apparatus and a (Results 23)

1) Family number: 2811037 (US5103991A)

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Title: SCREW CLOSURES FOR CONTAINERS

Abstract: A screw closure for a container has a metal body shell (30) into which a plastics moulding (44) is snap-engaged. The moulding provides a screw thread (52) for the closure; in addition, it extends below the body shell to provide a security ring (50) which is attached by rupturable bridges (62). Relative rotation of the moulding and body shell when the closure is being fitted onto a container is prevented by teeth (58) formed around the top edge of the moulding, which deeply indents the sealing gasket (38) of the body shell.

Classifications:

International (IPC 8-9): B65D41/04 B65D41/22

B65D41/34 (Advanced/Invention);

B65D41/04 B65D41/34 (Core/Invention)

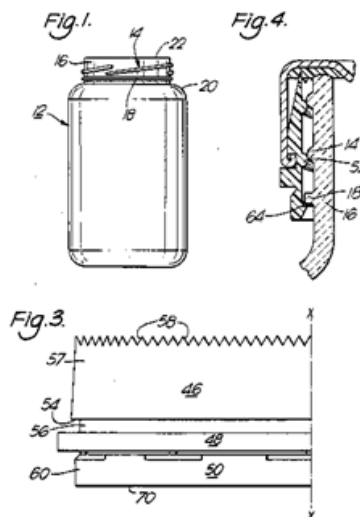
International (IPC 1-7): B65D101/00 B65D41/04 B65D41/22

B65D41/34 B65D55/12

CPC: B65D41/0492 B65D41/3457

European: B65D41/04G B65D41/34D3

US: 215/252 215/276 215/329 215/331

**Family:**

Publication number	Publication date	Application number	Application date
AU199172721 A1	19910912	AU19910072721	19910307
AU647083 B2	19940317	AU19910072721	19910307
CA2037887 AA	19910911	CA19912037887	19910308
EP0447114 A1	19910918	EP19910301859	19910306
GB9005417 A0	19900509	GB19900005417	19900310
NZ237335 A	19931223	NZ19910237335	19910306
US5103991 A	19920414	US19910665979	19910307
ZA9101686 A	19911224	ZA19910001686	19910307

Priority:

GB19900005417 19900310 CA19912037887 19910308

Probable Assignee: CMB FOODCAN PLC

Assignee(s): (std): CMB FOODCAN PLC ; COLLINS MALCOLM G ; METAL BOX PLC

Assignee(s): CMB PACKAGING UK LTD ; CMB FOODCAN PLC WOODSIDE PERRY WOOD WALK WORCESTER ; CMB PACKAGING UK LIMITED ; CARNAUDMETALBOX PLC ; CARNAUDMETALBOX PLC FORMERLY CMB FOODCAN PLC ; CARNAUDMETALBOX PLC WAS CMB FOODCAN PLC

Inventor(s): (std): COLLINS MALCOLM GEORGE ; COLLINS MALCOLM G ; MALCOLM GEORGE COLLINS

Agent(s): GRIFFITH HACK; FINLAYSON AND SINGLEHURST

Designated states: AT BE CH DE DK ES FR GB GR IT LI LU NL SE

2) Family number: 10758147 (US5740932A)

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Title: Security closure for bottles and the like

Abstract: A security closure for bottles and the like, which makes unauthorized opening clearly evident, comprises a pourer body, a cylindrical sleeve having an inner rim for retaining the pourer body, a cap screwed onto the pourer body, and a security band constituted by a ring which is divided into two structurally-independent, identical portions, and which is fixed to the cap by means of a weakened line, external teeth being formed on the cylindrical sleeve and opposing internal teeth being formed on the ring for engaging the teeth when the cap is first unscrewed.

Classifications:

International (IPC 8-9): B65D41/04 B65D41/34 B65D41/38

B65D43/02 B65D47/12 (Advanced/Invention);

B65D41/34 B65D43/02 B65D47/12 (Core/Invention)

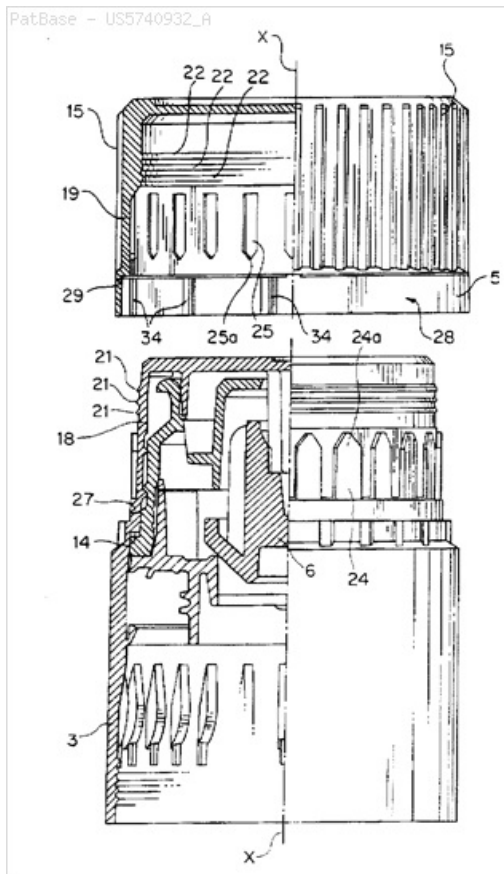
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B65D43/02 B65D47/12 B65D50/00 B65D50/00 B67B5/03

CPC: B65D41/3404 B65D47/123

European: B65D41/34A B65D47/12B1

US: 215/252 215/321 215/334

**Family:**

Publication number	Publication date	Application number	Application date
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RU95119426 A	19971227	RU19950119426	19951108
US5740932 A	19980421	US19950552297	19951102
ZA9509524 A	19960527	ZA19950009524	19951109

Priority:

EP19940830531 19941109 US19950552297 19951102

Probable Assignee: GUALA PATENT BV

Assignee(s): (std): GUALA KLOZHERES PATENTS BV ; GUALA PATENT BV ; GUALA PATENTS BV

Assignee(s): GUALA PATENT HERENGRACHT BV ; GUALA PATENTS B V ; GUALA PATENTS B V AMSTERDAM NL ; GUALA PATENT B V ; GUALA KLOZHERES PATENTS B V

Inventor(s): (std): P ERO BATTEGADZORE ; BATTEGAZZORE P ; BATTEGAZZORE PIERO

Inventor(s): BATTEGAZZORE PIERO I 15100 ALESSANDRIA IT ; PIETRO BATTEGAZZORE ; P'ERO BATTEGADZORE ; PIERO BATTEGAZZORE ; P BATTEGAZZORE

Agent(s): ERNESTO CAVELIER

Designated states: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

3) Family number: 47480185 (US2012091091A)

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Title: TAMPER-EVIDENT SEAL FOR A BOTTLE CLOSURE

Abstract: A bottle having a closure and a tamper-evident seal for the closure, with at least one sealing mark applied in an area between the closure and the bottle, so that the sealing mark is destroyed by partially opening the closure.

Classifications:

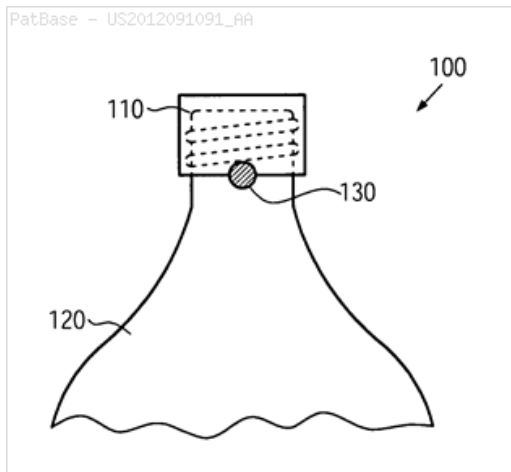
International (IPC 8-9): B65D41/00 B65D55/02

B65D55/06 (Advanced/Invention)

CPC: B65D55/06

European: B65D55/06

US: 215/230

**Family:**

Publication number	Publication date	Application number	Application date
■ CN102421678 A	20120418	CN201080018989	20100219
■ DE102009019362 A1	20101104	DE200910019362	20090429
■ DE502010005612 D1	20140206	DE201050005612T	20100219
■ EP2424789 A1	20120307	EP20100705811	20100219
■ EP2424789 B1	20131211	EP20100705811	20100219
■ US2012091091 AA	20120419	US20100266818	20100219
■ WO10124756 A1	20101104	WO2010EP01067	20100219

Priority:

DE200910019362 20090429 EP20100705811 20100219 WO2010EP01067 20100219

Probable Assignee: KRONES AG

Assignee(s): (std): KRONES AG ; STEINBERGER HARALD

Inventor(s): (std): STEINBERGER HARALD ; HARALD STEINBERGER

Agent(s): GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; GRUENECKER KINKELDEY STOCKMAIR AND SCHWANHAEUSSER; SCHUSTER THOMAS

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

4) Family number: 3311202 (US4744480A)

© PatBase

Title: TAMPER-EVIDENT CONTAINER-CLOSURE

Abstract: A container and tamper evident closure. The container has a threaded neck, first and second beads spaced below the threads and a groove between the beads. A threaded closure has a tamper-evident band connected to the lower terminal edge of the closure by a series of spaced, facturable bridges and retaining means cooperating with one bead to fracture the bridges when the closure is unscrewed. The band has a series of angularly disposed tabs which cooperate with the lower edge of the closure to limit lateral displacement and telescoping of the band when initially applied to the container.

Classifications:

International (IPC 8-9): B26F1/18 B26F1/20

B65D41/34 (Advanced/Invention);

B26F1/00 B65D41/34 (Core/Invention)

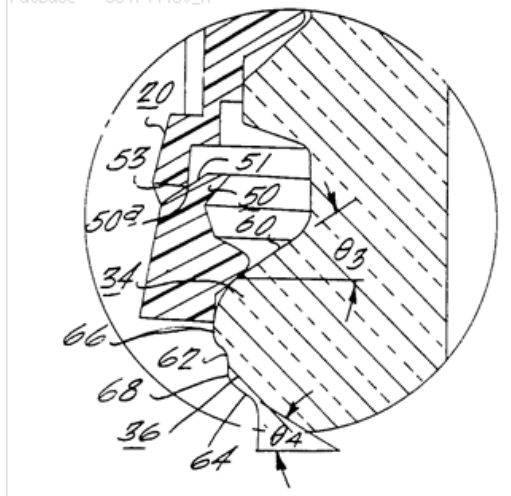
International (IPC 1-7): B29C53/02 B65D1/02 B65D41/34

CPC: Y10S215/901 Y10S425/809 B65D41/3447 B26F1/18 B26F1/20 B26F2210/04

European: B26F1/18 B26F1/20 B65D41/34D1 L26F210/04

US: 215/252 215/258 215/31 215/43 215/44 215/901 264/154 264/268 425/809

PatBase - US4744480_A

**Family:**

Publication number	Publication date	Application number	Application date
■ CA1281001 A1	19910305	CA19860525475	19861216
■ DE3674903 D1	19901115	DE19863674903	19861209
■ EP0228618 A2	19870715	EP19860117121	19861209
■ EP0228618 A3	19880420	EP19860117121	19861209
■ EP0228618 B1	19901010	EP19860117121	19861209

ES2018156 B3	19910401	ES19860117121T	19861209
US4744480 A	19880517	US19850810923	19851219
US4895265 A	19900123	US19880236408	19880825
US4904435 A	19900227	US19870139275	19871229

Priority:

US19850810923 19851219 CA19860525475 19861216 US19870139275 19871229
US19870139467 19871229 US19880236408 19880825

Probable Assignee: WEST PHARMACEUTICAL SERVICES INC

Assignee(s): (std): LUCH DANIEL ; PHARMA GUMMI WIMMER WEST GMBH ; WEST CO ; WIMMER PHARMA GUMMI GMBH

Assignee(s): WEST CO INC ; WEST PHARMACEUTICAL SERVICES INC ; WEST CO PHOENIXVILLE PA A CORP OF PA ; WEST CO INC THE ; PHARMA GUMMI WIMMER WEST GMBH 5180 ESCHWEILER DE ; THE WEST CO ; THE WEST COMPANY ; BABCOCK DAVID E

Inventor(s): (std): BABCOCK DAVID E ; BABCOCK DAVID E ; LUCH DANIEL

Inventor(s): LUCH DANIEL WILLIAMSPORT PA 17701 US

Agent(s): BORDEN LADNER GERVAIS LLP

Designated states: BE CH DE ES FR GB IT LI NL SE

5) Family number: 5107229 (US5137163A)

© PatBase

Title: Tamper evident closure with ramped contact

Abstract: A tamper evident closure assembly comprising a container, a cap and a band portion. The container has a neck with threads and an annular interference ring located axially below the threads and integral with the container finish. The cap is internally threaded, having a top, a peripheral edge integral with the top and an annular skirt integrally depending from the peripheral edge. An annular tamper indicating band is detachably connected to the skirt with a plurality of spaced connectors located between the cap and the band. The band has an annular shoulder on the inside surface thereof. The annular shoulder of the band and the interference ring are configured and arranged relative to each other so that upon the application of twisting torque by the user to remove the cap from the container, the connectors are subjected to a localized vertical force, which severs the connectors sequentially and one or more at a time. After breakage of the connectors, the band remains on the neck of the container as evidence of tampering or removal.

Classifications:

International (IPC 8-9): B65D41/34 (Advanced/Invention);

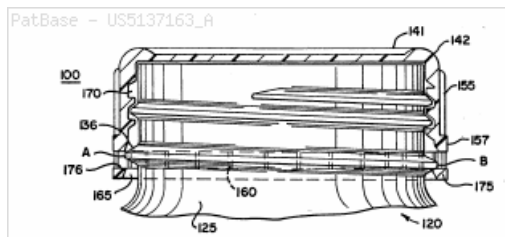
B65D41/34 (Core/Invention)

International (IPC 1-7): B65D41/34

CPC: B65D41/3447

European: B65D41/34D1

US: 215/252



Family:

Publication number	Publication date	Application number	Application date
US5137163 A	19920811	US19910771615	19911004

Priority:

US19910771615 19911004

Probable Assignee: PHOENIX CLOSURES INC

Assignee(s): (std): PHOENIX CLOSURES INC

Inventor(s): (std): MOORE DAVID N

6) Family number: 31027235 (US5248050A)

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Title: Cap having expandable guarantee strip

Abstract: A tamper-evident screw cap for a bottle is disclosed. A guarantee strip on the cap possesses a predetermined breakage point at which the guarantee strip is able to be separated through its entire width. The predetermined breakage point most preferably comprises at least two ribs. Preferably, a window-shaped stress relief aperture is arranged near the predetermined breakage point to improve the expandability of the guarantee strip when the cap is being screwed on for the first time. In this instance, the stress relief aperture prevents the forces caused by the circumferential expansion of the guarantee strip from breaking the predetermined breakage point. When screwing the cap off for the first time, a flow of forces is created in the guarantee strip such that the stress relief openings are no longer effective and the guarantee strip fulfills its function by tearing or otherwise separating to indicate that the cap has been removed.

Classifications:

International (IPC 8-9): B65D41/34 B65D55/08 (Advanced/Invention);

B65D41/34 (Core/Invention)

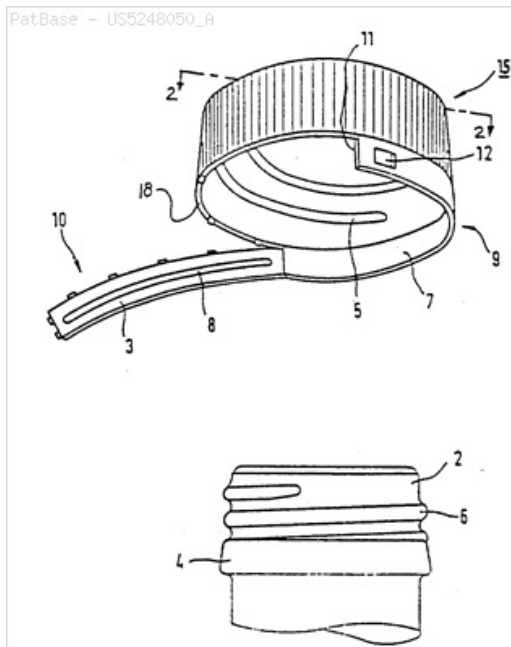
International (IPC 1-7): B65D101/00 B65D41/34 B65D41/38

B65D55/08

CPC: B65D41/3447 B65D2101/0046 B65D2101/0053

European: B65D41/34D1 L65D101/00A3D L65D101/00A3E

US: 215/252

**Family:**

Publication number	Publication date	Application number	Application date
AR246911 A1	19941031	AR19910319519	19910424
AT95785 E	19931015	AT19910810294T	19910419
AU199175099 A1	19911107	AU19910075099	19910418
AU648546 B2	19940428	AU19910075099	19910418
BRPI9101686 A	19911126	BR1991PI01686	19910426
CA2041078 AA	19911028	CA19912041078	19910424
DE59100477 D1	19931118	DE19915000477	19910419
EP0459941 A1	19911204	EP19910810294	19910419
EP0459941 B1	19931013	EP19910810294	19910419
ES2046033 T3	19940116	ES19910810294T	19910419
JP4242555 A2	19920831	JP19910096616	19910426
NO911503 A	19911028	NO19910001503	19910417
NO911503 A0	19910417	NO19910001503	19910417
NO911503 L	19911028	NO19910001503	19910417
US5248050 A	19930928	US19920905087	19920624
ZA9103157 A	19920129	ZA19910003157	19910426

Priority:

CH19900001453 19900427 EP19910810294 19910419 CA19912041078 19910424
 US19910692273 19910429 US19920905087 19920624

Probable Assignee: OBRIST CLOSURES SWITZERLAND GMBH

Assignee(s): (std): CROWN CORK A G ; CROWN CORK AG

Assignee(s): CROWN CORK AG REINACH CH ; KUROUT KORUKU AG ; CROWN CORK AKTIENGESSELLSCHAFT ; OBRIST CLOSURES SWITZERLAND GMBH ; CROWN CORK AND SEAL TECHNOLOGIES CORP ; CROWN OBRIST GMBH ; CROWN PACKAGING TECHNOLOGY INC ; CROWN YORK AG ; JANOUSCH HERWIG ; KIRCHGESSNER MICHAEL ; CROWN CORK REINACH CH AG ; BARTL FRANZ THOMAS ; CHASE MANHATTAN BANK AS COLLATERAL AGENT

Inventor(s): (std): MIHIYAERU KIRUSHIYUGESUNAA ; MICHAEL KIRCHGESSNER ; FURANTSU TOMAASU BARUTORU ; HERWIG JANOUSCH ; HEABUIKU YANOUSHIYU ; FRANZ THOMAS BARTL ; THOMAS BARTL ; BARTL FRANZ T ; BARTL THOMAS ; BARTL FRANZ THOMAS ; KIRCHGESSNER MICHAEL ; JANOUSCH HERWIG

Inventor(s): JANOUSCH HERWIG W 7880 BAD SAECKINGEN DE ; KIRCHGESSNER MICHAEL W 7852 BINZEN DE ; BARTL FRANZ THOMAS CH 4123 ALLSCHWIL CH

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; MCFADDEN FINCHAM; OSLER HOSKIN AND HARCOURT LLP

Designated states: AT BE CH DE DK ES FR GB IT LI NL SE

7) Family number: 1164257 (US3901403A)

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Title: TEAR-OPEN TAMPERPROOF CLOSURE SEAL

Abstract: A bottle having a finish with a ribbed annular protrusion is provided with a molded plastic seal having internal surfaces which cooperate with the protrusion to prevent the seal from being disengaged from the bottle without being destroyed. The seal is weakened at predetermined circumferential locations, and an integral finger grip is provided for rupturing the seal at the weakened locations to separate the seal from the bottle when the finger grip is displaced circumferentially. 12 Claims, 6 Drawing Figures

Classifications:

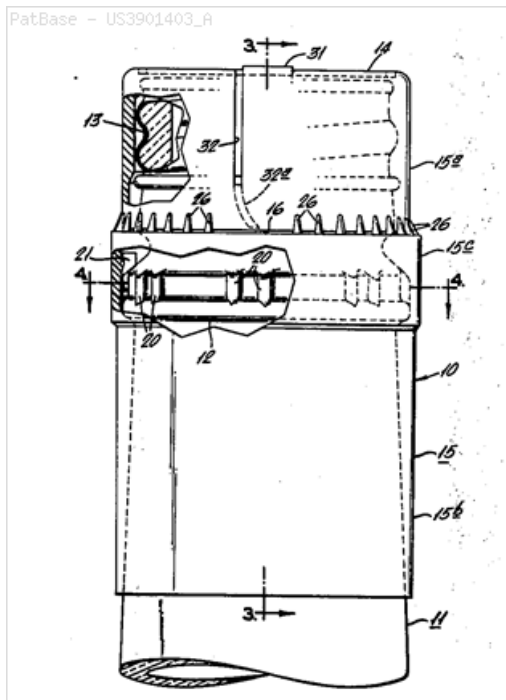
International (IPC 8-9): B65D41/62 (Advanced/Invention); B65D41/00 (Core/Invention)

International (IPC 1-7): B65D41/62 B65D51/18 B65D51/20

CPC: B65D41/62

European: B65D41/62

US: 215/251 215/254 215/258

**Family:**

Publication number	Publication date	Application number	Application date
FR2247395 A1	19750509	FR19740034174	19741003
FR2247395 B3	19770722	FR19740034174	19741003
US3901403 A	19750826	US19730406270	19731015

Priority:

US19730406270 19731015

Probable Assignee:

WEST CO

Assignee(s): (std):

WEST CO ; WEST CY

Assignee(s):

WEST CY US ; THE WEST COMPANY

Inventor(s): (std):

MENKE EUGENE W

8) Family number: 23010344 (US3335889A)

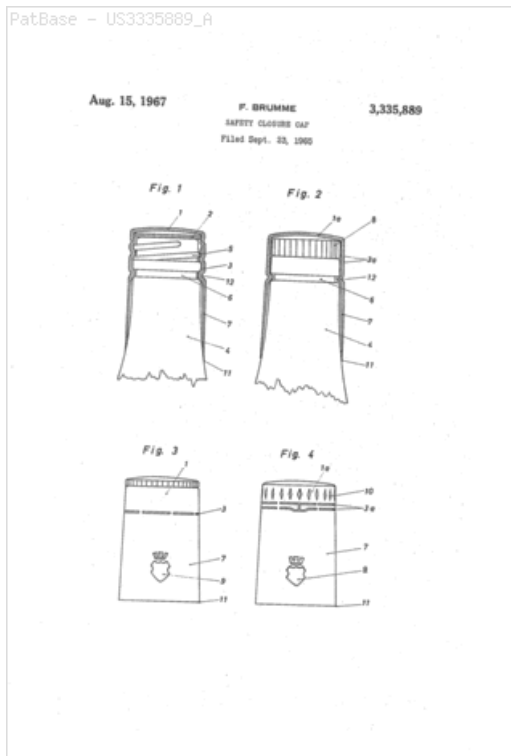
© PatBase

Title: SAFETY CLOSURE CAP

Abstract: (Claim 1) 1. For the neck of a bottle having a mouth; a closure cap comprising a one-piece member adapted for application onto the neck of the bottle for covering the mouth thereof, said member including means whereby the member can be divided into an upper first portion which is removable from the bottle and a second lower portion which remains on the bottle even with the first portion removed, said member being of conical form widening downwardly, said second lower portion being smooth when applied onto the neck and thereby adapted for having visual indicia applied thereon which is undisturbed by the application of the cap onto the bottle, and means below the first said means by which the member can be divided, for securely engaging the neck of the bottle such that the cap has a smooth continuous outer surface of uniform conical taper, the means for securely engaging the neck of the bottle comprising an indented portion in engagement with the neck of the bottle, said neck having a continuous and uniform outer surface with a groove therein, said indented portion being in said groove.

Classifications:

International (IPC 8-9): B65D41/34 B65D41/46
 B65D41/62 (Advanced/Invention);
 B65D41/00 B65D41/32 B65D41/34 (Core/Invention)
International (IPC 1-7): B65D41/34 B65D55/06
CPC: B65D41/46 B65D41/62 B65D41/348
European: B65D41/34F B65D41/46 B65D41/62
US: 215/252 215/253

**Family:**

Publication number	Publication date	Application number	Application date
CH428471 A	19670115	CH19650010028	19650716
DE1913980 U	19650415	DE1965V017270U	19650218
FR1441104 A	19660603	FR19650025176	19650719
GB1114897 A	19680522	GB19650030801	19650720
LU49121 A	19650921	LU19650049121	19650720
NL6509815 A	19660819	NL19650009815	19650729
US3335889 A	19670815	US19650489540	19650923

Priority:

DE1965V017270U 19650218

Probable Assignee: NACKENHEIM VER KAPSELFAB**Assignee(s):** (std): NACKENHEIM VER KAPSELFAB**Assignee(s):** VEREINIGTE KAPSELFABRIKEN NACKENHEIM G M B H ; VEREINIGTE KAPSELFABRIKEN NACKENHEIM GMBH ; KAPSELFABRIKEN NACKENHEIM GMBH VER**Inventor(s):** (std): FRITZ BRUMME**Inventor(s):** BRUMME FRITZ**9) Family number: 8446405 (US5360126A)**

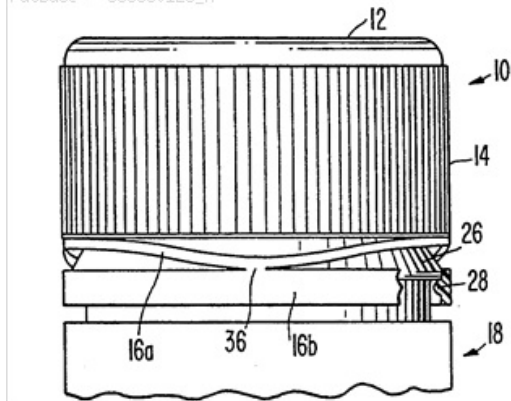
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Title: Tamper-evident plastic closure with 2-tier bridge arrangement

Abstract: A plastic closure has a tamper-evident band with a 2-tier bridge arrangement comprising upper and lower bridges that are staggered circumferentially of the band. The upper bridges are spaced along an upper line of weakness and connect the tamper-evident band to the side wall of the closure, while the lower bridges are spaced along a lower line of weakness and connect a lower portion of the tamper-evident band to an upper portion of the band. The lower portion has an internal locking bead for engaging an external locking shoulder on the neck of a container. When the closure is moved in a direction to remove it from the container, the upper portion of the band is deformed into a zig-zag shape. Eventually upper bridges, which are weaker than the lower bridges, break, so that at least a top part of the closure can be removed from the container.

Classifications:**International (IPC 8-9):** B65D41/34 B65D50/00 (Advanced/Invention); B65D41/34 B65D50/00 (Core/Invention)**International (IPC 1-7):** B65D41/34 B65D50/00**CPC:** B65D41/3447**European:** B65D41/34D1**US:** 215/252

PatBase - US5360126_A

**Family:**

Publication number	Publication date	Application number	Application date
AU199458488 A1	19940719	AU19940058488	19931214
CO4180398 A1	19950607	CO19930423746	19931221
ECSP931013 A	19940627	EC1993SP01013	19931220
US5360126 A	19941101	US19920994299	19921221
WO9414674 A1	19940707	WO1993US12145	19931214

Priority:

US19920994299 19921221 WO1993US12145 19931214

Probable Assignee: ZAPATA INDUSTRIES INC

Assignee(s): (std): ZAPATA IND INC ; ZAPATA INDUSTRIES INC

Assignee(s): ZAPATA IND

Inventor(s): (std): SNYDER WILLIAM JOSEPH ; WALKER ROCCO DAVID ; WALKER ROCCO D ; SNYDER WILLIAM J

Inventor(s): ROCCO DAVID WALKER ; WILLIAM JOSEPH SNYDER ; DAVID WALKER ROCCO

Agent(s): XIMENA CASTELLANOS ABONDANO

Designated states: AT AU BE BR CA CH DE DK ES FR GB GR IE IT JP LU MC NL PT SE

10) Family number: 1070481 (US3809365A)

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Title: PROTECTIVE CAP OF SYNTHETIC MATERIAL FOR MOUTHS OF CONTAINERS, PARTICULARLY CORKED WINE BOTTLES

Abstract: For a container having an open end and a radially outwardly projecting ridge on the exterior of the neck and spaced downwardly from the open end thereof defining a pair of radially spaced rims, a closure cap of resilient flexible material comprising a top overlying the open end of the container, a skirt depending from the outer peripheral edge of the top, fracturable means connecting the top to the skirt to permit removal of the top, said skirt having a circumferentially extending section of greater cross section and of an axial depth greater than the ridge on the container neck said section having an internal diameter slightly less than the outside diameter of the ridge on the container, means defining a circumferential groove in said thickened section of said skirt spaced from the top a predetermined distance so that it engages the lower rim of the ridge when the top is seated on the axial end face of the container, the outer portion of the thickened section extending beyond the rims of the ridge to hold the cap in place on the container.

Classifications:

International (ipc 8-9): B65D41/62 (Advanced/Invention);

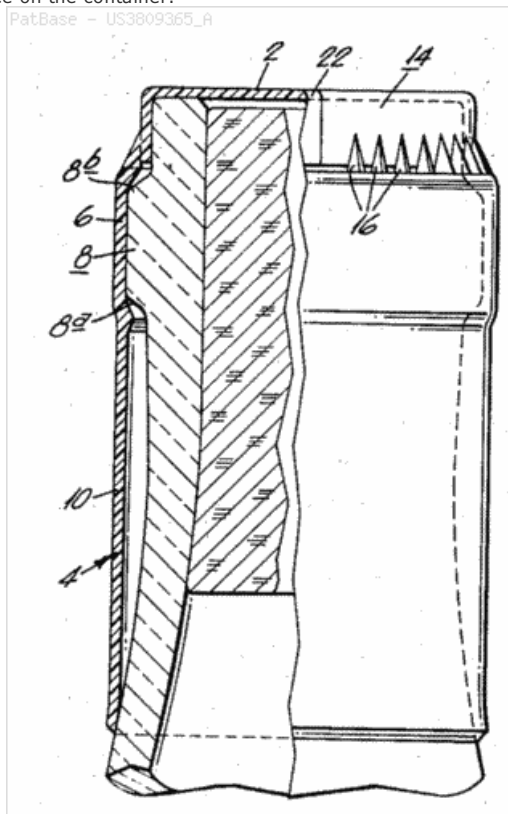
B65D41/00 (Core/Invention)

International (ipc 1-7): B65D41/02 B65D41/62

CPC: B65D41/62

European: B65D41/62

US: 215/253 215/277



Family:

Publication number	Publication date	Application number	Application date
US3809365 A	19740507	US19710155198	19710621

Priority:

US19710155198 19710621

Probable Assignee:

LOFFLER H

Assignee(s): (std):

LOFFLER H

Assignee(s):

LOFFLER H DT

Inventor(s): (std):

LOFFLER H

Inventor(s):

LOFFLER H DT

11) Family number: 2269556 (US4674643A)

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Title: Plastic closure with structural thread formation

Abstract: A plastic closure for use on a container having an externally threaded neck is disclosed wherein the skirt portion of the closure cap includes an internal structural thread formation. The structural thread formation comprises a helical thread ramp portion which is configured for load-bearing engagement with the thread of the associated container, and further includes means for reinforcing the thread ramp portion, in the form of a plurality of spaced-apart reinforcing gussets. The provision of the structural thread formation desirably facilitates high-speed molding of the closure, and desirably acts to reduce the quantity of plastic material required for molding the closure.

Classifications:

International (IPC 8-9): B65D41/04 B65D41/34 B65D51/16 B65D55/08 (Advanced/Invention);

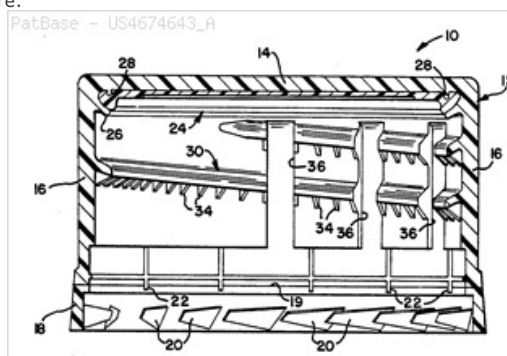
B65D41/04 B65D41/34 B65D51/16 (Core/Invention)

International (IPC 1-7): B65D41/04 B65D41/34 B65D51/16 B65D55/06 B65D55/08

CPC: B29L2031/565 B65D41/04 B65D41/0435 B65D41/045 B65D41/3423 B65D51/1688

European: B65D41/04 B65D41/04D B65D41/04D2 B65D41/34C B65D51/16E3 L29L31/56B

US: 215/252 215/307 215/329



Family:

Publication number	Publication date	Application number	Application date
AU198770196 A1	19870924	AU19870070196	19870319
AU582985 B2	19890413	AU19870070196	19870319
BRPI8701274 A	19871229	BR1987PI01274	19870320
CA1287016 A1	19910730	CA19870532411	19870319
DE3763873 D1	19900830	DE19873763873	19870318
EP0239873 A2	19871007	EP19870103919	19870318
EP0239873 A3	19881019	EP19870103919	19870318
EP0239873 B1	19900725	EP19870103919	19870318
ES2016814 B3	19901201	ES19870103919T	19870318
JP62271849 A2	19871126	JP19870067725	19870320
MX164501 B	19920821	MX19870005625	19870319
US4674643 A	19870623	US19860841864	19860320
ZA8701915 A	19871028	ZA19870001915	19870316

Priority:

US19860841864 19860320 CA19870532411 19870319

Probable Assignee: HC IND

Assignee(s): (std): HC IND ; H C IND INC

Assignee(s): H C IND INC A CORP OF IN ; H C INDUSTRIES INC ; H C IND ; H C PLASTIC INC ; HC IND INC ; H C PLASTIC INC A DE CORP ; H C INDUSTRIES INC CRAWFORDSVILLE IND US ; WILDE SHELDON L ; MORTON HUGH V JR

Inventor(s): (std): WILDE SHELDON L ; MORTON HUGH V JR ; MORTON JR HUGH V ; SHELDON L WILDE ; HUGH V MORTON JR ; MORTON JR ; SHIERUDON ERU WAIRUDE ; HIYUU BUI MOOTON JIYUNIA ; MORTON HUGH V

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; FETHERSTONHAUGH AND CO

Designated states: CH DE ES FR GB IT LI NL SE

12) Family number: 66515620 (US2017217646A)

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Title: TAMPER EVIDENCE BRIDGES

Abstract: An apparatus and a method are provided for a container cap comprising a plurality of tamper evidence bridges configured to provide evidence that the container cap has been removed from a container by other than a manufacturer of the container. The tamper evidence bridges comprise a small tab of material that extends from a bottom-most edge of the container cap to a neck ring of the container. The tamper evidence bridges are configured to break, or snap, when the container cap is rotated relative to the neck ring. Broken tamper evidence bridges provide readily visible evidence to an end-user of the container that the container cap has been removed by other than the manufacturer of the container. The high visibility of the tamper evidence bridges serves to discourage vendors from attempting to refill and resale of the used containers.

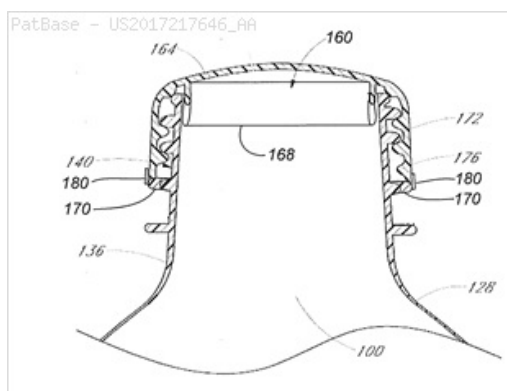
Classifications:

International (IPC 8-9): B29C65/76 B65D1/02 B65D41/32 B65D41/34 B65D50/00 B65D55/02 (Advanced/Invention)

International (IPC 1-7): B29C65/76 B65D41/32 B65D41/34 B65D50/00

CPC: B65D41/3409 B65D41/3404 B65D55/024 B65D2101/003 B65D1/0246 B65D1/0284 B65D41/3447 B65D41/3495 B65D2101/00

US: 1/1 215/44



Family:

Publication number	Publication date	Application number	Application date
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AU2017215352 AA	20180816	AU20170215352	20170202
BR112018015742 A2	20190108	BR20181115742	20170202
CA3013581 AA	20180802	CA20173013581	20170202
CN109415141 A	20190301	CN201780018891	20170202
CO20180008194 A2	20180821	CO20180008194	20180802
EP3411301 A1	20181212	EP20170748181	20170202
EP3411301 A4	20191009	EP20170748181	20170202
ID201900452 A	20190118	ID2018P0005775	20170202
IN201817032208 A	20190104	IN201817032208	20180828
JP2019503313 T2	20190207	JP20180559684T	20170202
US2017217646 AA	20170803	US20170423383	20170202
US2019241325 AA	20190808	US20190386100	20190416
US10377534 BB	20190813	US20170423383	20170202
WO17136590 A1	20170810	WO2017US16278	20170202

Priority:

US20160290434P 20160202 US20170423383 20170202 WO2017US16278 20170202
US20190386100 20190416

Probable Assignee: NIAGARA BOTTLING LLC

Assignee(s): (std): HANAN JAY ; HANAN JAY CLARKE ; JAY CLARKE HANAN ; NIAGARA BOTTLING LLC

Inventor(s): (std): HANAN JAY CLARKE ; JAY CLARKE HANAN

Agent(s): SPRUSON AND FERGUSON; WILSON LUE LLP; JAIME EDUARDO DELGADO VILLEGAS; DEHNS; ANNISA AM BADAR SH LLM; KAWAGUTI AND PARTNERS; RUTAN AND TUCKER LLP; SAYED HANI Z

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

13) Family number: 21010627 (US2947432A)

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Title: CAP SEALS AND THE LIKE FOR THE SEALING AND FOR THE PUTTING OF A CAPSULE ON CONTAINERS PARTICULARLY ON BOTTLES

Abstract: (Claim 1) In a plastic cap seal for the sealing of containers having a neck and an annular Range on said neck, said plastic cap seal comprising an upper part having a recess for the annular flange of the neck of the container, 'a skirt, - ,an annular shoulder in the inner surface of the skirt id6fining the 'lower margin of said recess for the annilar flange of the neck, the thickness of said skirt decre ing progressively from said shoulder _to its lower extremity, and means on the inner surface of said skirt enabling the air enclosed in said cap seal to escape ssheh 'driven in, said skirt ending in a fflexible and elastically deformable circular edge the diameter of which is slight- ly less -than the diameter of said neck to effect a snug _fit, ihe _elasti of said skirt causing the engagement city of said shoulder under said flange of said container neck to,prevent any removal of said cap seal when once set in - place.

Classifications:

International (ipc 8-9): B65D41/18 B65D41/62 (Advanced/Invention); B65D41/00 B65D41/02 (Core/Invention)

International (ipc 1-7): B65D41/18 B65D41/22

CPC: B65D41/18 B65D41/62

European: B65D41/18 B65D41/62

US: 215/320 215/321 215/329 215/349



Family:

Publication number	Publication date	Application number	Application date
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DE1097305 B	19610112	DE1957M033932	19570418
FR1150438 A	19580113		19560504
LU35102 A	00000000		00000000
US2947432 A	19600802	US19570652888	19570415

Priority:

Probable Assignee: MARCEL HENRI
Assignee(s): (std): HENRI MARCEL ; MARCEL HENRI
Inventor(s): (std): MARCEL HENRI ; HENRI MARCEL

14) Family number: 15136637 (US6003701A)

© PatBase

Title: Tamper resistant bottle cap and neck

Abstract: A tamper resistant bottle cap and neck for a threaded blow molded bottles which hold liquid, such as milk. The bottle cap and neck combination has an enhanced tamper evidency feature wherein a circumferential lip is formed at the outside edge of the interface between the cap and the neck. The lip protects the contents of the bottle by limiting the ability of potential tamperers to pry or bend upwardly the ratchet ring at lower edge of the cap.

Classifications:**International (ipc 8-9):** B65D B65D23/00 B65D41/32 B65D41/34

B65D41/48 (Advanced/Invention);

B65D41/32 B65D41/34 (Core/Invention)

International (ipc 1-7): B65D B65D1/02 B65D23/00 B65D41/32

B65D41/34 B65D41/38 B65D41/48 B65D50/00 B65D55/02

CPC: B65D41/325 B65D41/3409 B65D41/32 B65D41/485**European:** B65D41/32 B65D41/32B B65D41/34A1 B65D41/48B**US:** 215/252 215/256 215/44

PatBase - US6003701_A

U.S. Patent Dec. 21, 1999 Sheet 1 of 4 6,003,701

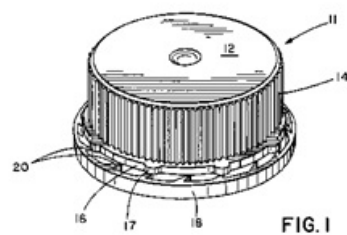


FIG. 1

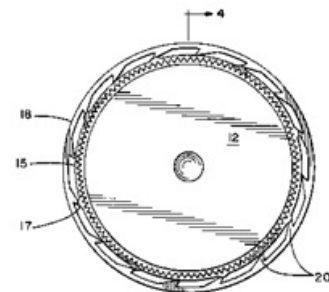


FIG. 2

Family:

Publication number	Publication date	Application number	Application date
CA2261017 AA	19990804	CA19992261017	19990203
CA2261017 C	20050614	CA19992261017	19990203
CN1132766 C	20031231	CN19991005628	19990204
CN1239058 A	19991222	CN19991005628	19990204
DE60019077 D1	20050504	DE20006019077	20001220
DE60019077 D1	20050504	DE20006019077T	20001220
DE60019077 T2	20050901	DE20006019077T	20001220
DE69916520 D1	20040527	DE19996016520	19990204
DE69916520 D1	20040527	DE19996016520T	19990204
DE69916520 T2	20040819	DE19996016520T	19990204
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EP0941938 A3	20001227	EP19990300823	19990204
EP0941938 B1	20040421	EP19990300823	19990204
EP1114781 A2	20010711	EP20000311474	20001220
EP1114781 A3	20021113	EP20000311474	20001220
EP1114781 B1	20050330	EP20000311474	20001220
ES2218951 T3	20041116	ES19990300823T	19990204
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GB2358182 C	20071106	GB20000030847	20001218
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HK1023759 B	20040924	HK20000102997	20000519
IL128333 A0	20000131	IL19990128333	19990202
IL128333 A1	20010913	IL19990128333	19990202
MXPA99001314 A1	20020619	MX19990001314	19990203
US6003701 A	19991221	US19980018620	19980204
US6523710 BA	20030225	US19990467433	19991220

Priority:

US19980018620 19980204 CA19992261017 19990203 US19990467433 19991220

Probable Assignee: BLACKHAWK MOLDING CO INC

Assignee(s): (std): BLACKHAWK MOLDING CO ; BLACKHAWK MOLDING CO INC ; HIDDING DOUGLAS J ; WALTER E HIDDING ; HIDDING WALTER E ; HIDDING ROBERT D ; HIDDING WALTER EDWARD ; ROBERT D HIDDING

Assignee(s): WALTER EDWARD HIDDING ; BLACKHAWK MOLDING CO INC 120 INTERSTATE ROAD ADDISON IL 60101 UNITED ; DOUGLAS J HIDDING

Inventor(s): (std): DOUGLAS J HIDDING ; HIDDING DOUGLAS J ; HIDDING WALTER E ; HIDDING ROBERT D ; HIDDING WALTER EDWARD ; ROBERT D HIDDING ; WALTER E HIDDING

Inventor(s): WALTER EDWARD HIDDING

Agent(s): CASSAN MACLEAN; CASSAN MACLEAN IP AGENCY INC; NTD PATENT AND TRADE MARK AGENCY LTD UNITS 1805 6 18 F GREENFIELD TOWER; REINHOLD COHN AND PARTNERS

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

15) Family number: 7525646 (US3773205A)

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Title: THERMOFORMED CLOSURES WHICH ARE SEALED TO CONTAINERS BY THE USE OF SONIC ENERGY AND THE METHOD OF SEALING THE SAME

Abstract: Closures thermoformed from a relatively thin sheet of plastic material are sealed to containers by the use of sonic energy to control the amount of torque needed to unfasten such closures and also to provide a "tamper-proof" seal.

Classifications:

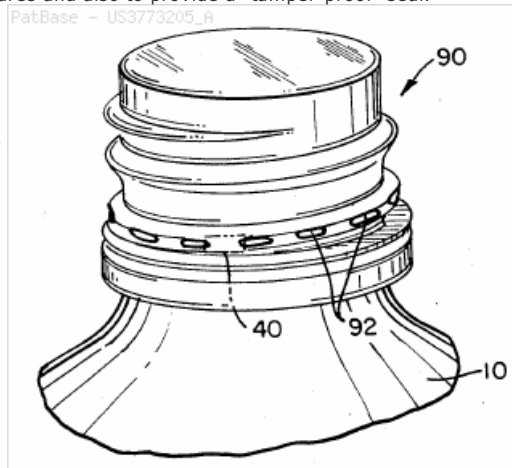
International (IPC 8-9): B29C65/02 B29C65/08 B29C65/76 B65D41/34 (Advanced/Invention); B29C65/00 B29C65/02 B29C65/08 B65D41/34 (Core/Invention)

International (IPC 1-7): B65D41/04 B65D41/20

CPC: Y10S53/02 Y10S206/807 Y10S220/31 B29C65/08 B29C65/76 B29C66/21 B29L2031/565 B65D41/3495 B29C66/5342 B29C66/5346 B29C66/542 B29C66/8322 B29C66/73921 B29C66/1122

European: B29C65/02 B29C65/02T20 B29C65/08 B29C65/76 B29C66/21 B29C66/534 B65D41/34H L29L31/56B

US: 156/73.1 206/497 206/807 215/246 215/252 215/4.2 220/DIG.31 264/445 53/478 53/DIG.2



Family:

Publication number	Publication date	Application number	Application date
US3773205 A	19731120	US19710120893	19710304

Priority:

US19710120893 19710304

Probable Assignee: KLM CO STRATFORD

Assignee(s): (std): KLM CO STRATFORD

Assignee(s): KLM CO STRATFORD US

Inventor(s): (std): KEELER F ; ELLIS C ; MILLER J

Inventor(s): MILLER J US ; ELLIS C US ; KEELER F US

16) Family number: 31937683 (US2008053949A)

© PatBase

Title: PACKAGING ARTICLE

Abstract: A beverage container (1) comprises a container body (3) including an opening and a cap (5) to close the opening, the cap (5) or the container body (3) including one or more bayonet threads (57), and the container body (3) or the cap (5) respectively including one or more protrusions (19) arranged to engage with a respective bayonet thread (57) to secure the cap (5) to the container body (3). At least one of the bayonet threads (57) includes one or more stop members arranged to retain the, or each, protrusion (19) substantially fully engaged with the bayonet thread (57) such that the opening is substantially fully closed by the cap (5), until a releasing torque sufficient to overcome the retention is applied to the container.

Classifications:

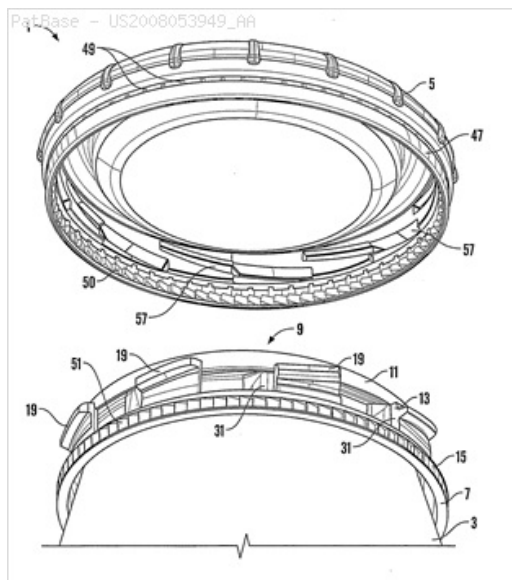
International (IPC 8-9): B65B7/28 B65D41/00 B65D41/04 B65D41/06 B65D41/08 B65D41/34 B65D41/38 (Advanced/Invention); B65D41/04 B65D41/06 B65D41/08 B65D41/38 (Advanced/Non-invention); B65D (Subclass/Invention)

International (IPC 1-7): B65D25/00 B65D41/06 B65D41/08

CPC: B65D41/06 B65D41/065 B65D41/08 B65D41/086

European: B65D41/06 B65D41/06B B65D41/08 B65D41/08B

US: 215/222 215/329 215/329S 215/332 215/335 215/347 215/347S 215/352 215/352S 215/384 215/384S 215/44 215/44P 220/252 220/296 220/298 220/300



Family:

Publication number	Publication date	Application number	Application date
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AT534585 E	20111215	AT20050755136T	20050623
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RU2388672 C2	20100510	RU20070102280	20050623
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ZA200700292 A	20100630	ZA20070000292	20070110

Priority:

GB20040014065 20040623 GB20050005934 20050323 GB20050005930 20050323
EP20050755136 20050623 EP20050755404 20050623 WO2005GB02471 20050623
WO2005GB02479 20050623 WO2005GB02474 20050623

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Assignee(s): TREDLESS KLOUZHHERZ LIMITED ; DUBOIS LIMITED ; THREADLESS CLOSURES LIMITED

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Inventor(s): FARRAR PETER ANTHONY GLENELG ; FARRAR PETER ANTHONY HEIN JOHN DANDO WILLIAM ; FARRAR PETER ANTHONY GLENELG LOW BARN ; ANTHONY HENRY JOSEPH FRASER ; PETER ANTHONY FARRAR ; WILLIAM GEORGE DANDO ; FRASER ANTHONY HJ ; DANDO UILL JAM DZHORDZH

Agent(s): CALLINANS; FISHER ADAMS KELLY CALLINANS; SPRUSON AND FERGUSON; RIDOUT AND MAYBEE LLP; PATENTANWAELTE WALLACH KOCH AND PARTNER; UNWIN STEPHEN GEOFFREY; MEADWESTVACO ALEXANDRA B URBAN ESQ CORP; MEADWESTVACO ATTN IVETTE REYES CORP; MEADWESTVACO CORP; DICKSTEIN SHAPIRO LLP; QUARLES AND BRADY LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

17) Family number: 57616686 (CN203975519U)

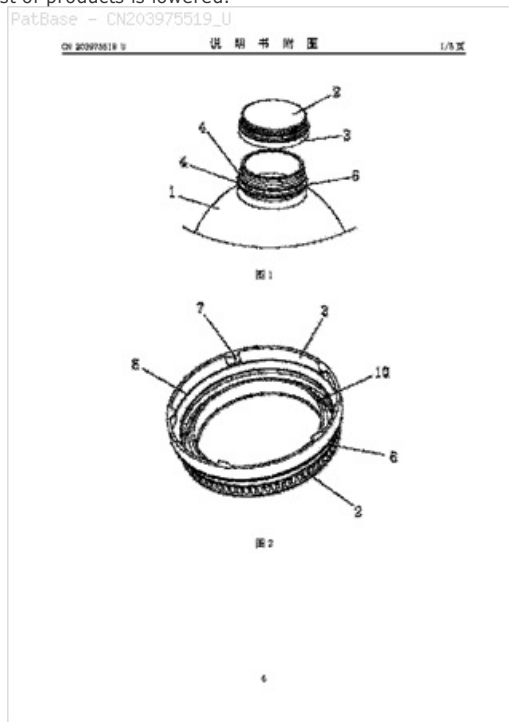
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Title: BEVERAGE BOTTLE WITH HEIGHT OF BOTTLE CAP CAPABLE OF BEING LOWERED

Abstract: The utility model discloses a beverage bottle with the height of a bottle cap capable of being lowered. The beverage bottle comprises a bottle body and the bottle cap, an anti-theft ring is arranged at the lower end of the bottle cap, a tearing portion is arranged between the anti-theft ring and the lower end of the bottle cap, and a protruding ring used for buckling the anti-theft ring is arranged on the outer wall of the bottle opening of the bottle body. When the bottle cap is opened, the bottle cap is pushed or rotated, the bottle cap cracks along the tearing portion, and the bottle cap can be opened; threads are omitted, assembling is convenient, connection is reliable, the height of the bottle cap can be effectively lowered, consumption of raw materials is reduced, and production cost of products is lowered.

Classifications:

International (IPC 8-9): B65D41/34 B65D41/58 B65D55/08 B65D55/16 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN104108527 A	20141022	CN201410228566	20140528
CN203975519 U	20141203	CN201420276190U	20140528

Priority:

Probable Assignee: LI HONGBIAO
Assignee(s): (std): LI HONGBIAO
Inventor(s): (std): LI HONGBIAO

18) Family number: 10795704 (US5749201A)

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Title: LASER BONDED TAMPER PROOF PRESS-ON CAP AND SEAL

Abstract: There is disclosed a press-on cap having a flat top with a cylindrical skirt with an annular tear band defined by a pair of annular score lines, and with at least two annular inner beads which seat in annular grooves in the neck of a bottle. The cap skirt extends below the lower score line of the annular tear band to form a tamper-proof ring which is bonded by laser radiation at least one, preferably two, spots to the neck of the plastic bottle. The spot bonds preferably have a diameter no greater than about 0.15 inch. The invention also comprises a bottle filler line which includes a capping station in which caps are applied and pressed downwardly over the narrow necks of the bottles which have been filled with a liquid such as milk or non-carbonated beverage, and a cap bonding station in which the capped and filled bottles are passed between laser beam effectors which are pulsed momentarily to spot bond the tamper-proof rings of the caps to the necks of the bottles.

Classifications:

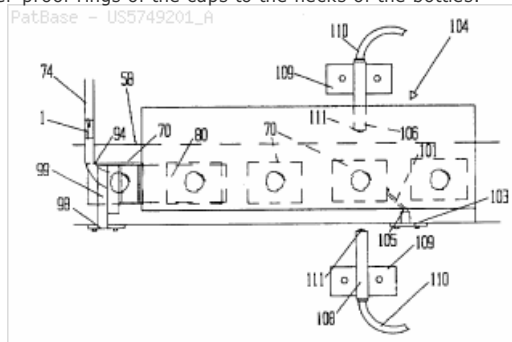
International (IPC 8-9): B29C65/16 B65D41/48 (Advanced/Invention);
 B29C65/14 B65D41/32 (Core/Invention)

International (IPC 1-7): B65B3/00 B65B7/28 B65D41/32 B65D41/46
 B67B3/22

CPC: Y10S430/146 B29C65/1687 B29C66/1122 B29C66/21
 B29C66/542 B65D41/48 B65D2543/00972 B29C65/1664
 B29C66/836 B29C66/73921 B29C66/8226

European: B29C65/16 B29C66/534 B65D41/48 L65D543/00Y20B1

US: 430/945 53/281 53/282

**Family:**

Publication number	Publication date	Application number	Application date
US5749201 A	19980512	US19960699166	19960819
WO9807626 A1	19980226	WO1997US13455	19970729

Priority:

US19960699166 19960819

Probable Assignee: COCHRANE BENJAMIN

Assignee(s): (std): COCHRANE BENJAMIN

Inventor(s): (std): COCHRANE BENJAMIN

Designated states: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE

19) Family number: 13261905 (US5213225A)

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Title: CONTAINER AND CLOSURE

Abstract: A container neck (14) and a container closure comprises a first thread (15) on one of the neck and the closure, a complementary second thread on the other of the neck and the closure such that the closure is moveable from fully disengaged from the neck to fully closed by turning the closure relative to the neck by less than 360 DEG, at least one stop formation (17,18) carried by said one of the neck (14) and the closure, and stop means on said other of the neck and the closure engageable with the stop formation or at least one of the stop formations to hold the closure in a closed position on the neck. The arrangement of the or each stop formation (17,18), the stop means and the threads is such that the stop means is rotated past the stop formation or at least one of the stop formations (17,18) without engagement therewith when the closure is screwed on to the neck, engagement of the stop means with the stop formation or at least one of the stop formations commencing only when the closed positioned is neared.

Classifications:

International (IPC 8-9): B29C49/06 B65D1/02 B65D1/20 B65D23/06
 B65D25/16 B65D39/00 B65D41/04 B65D41/34 B65D41/48
 B65D50/00 B65D50/04 B65D51/20 B65D51/24 B65D55/02
 B65D55/06 (Advanced/Invention);

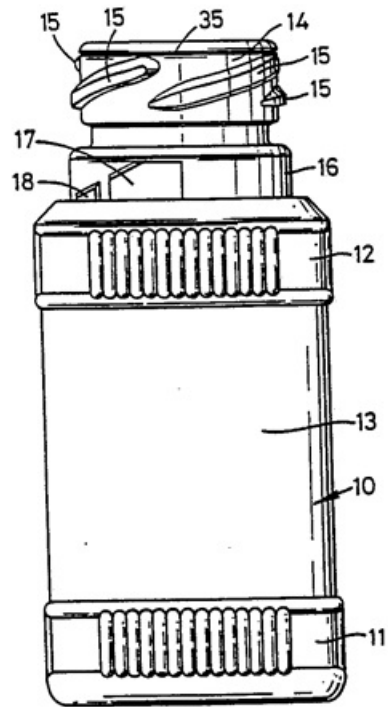
B29C49/06 B65D41/34 (Advanced/Non-invention);
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 B65D41/04 B65D41/32 B65D41/34 B65D50/00 B65D51/18
 B65D51/24 B65D55/02 (Core/Invention)

International (IPC 1-7): B29C49/06 B29C69/00 B65B41/04
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 B65D41/3447 B65D41/48 B65D50/041 B65D51/20 B65D51/242
 B65D55/066 B65D2101/0023 B65D2251/0015 B65D2251/0093

European: B65D1/02 B65D1/02D1 B65D23/06 B65D25/16
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 B65D41/48 B65D50/04B B65D51/20 B65D51/24B B65D55/06D
 L65D101/00A3 L65D251/00Y2D L65D251/00Y6M L65D501/02Y9

US: 205/305 205/329 205/330 205/331 215/214 215/216 215/217
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**Family:**

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CA2113105 AA	19940107	CA19922113105	19920710
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Priority:

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US19950470351	19950606	US19950477903	19950607	US19950484604	19950607
US19950486041	19950607				

Probable Assignee: BEESON AND SONS LTD

Assignee(s): (std): BEESON AND SONS LTD ; BISAN END SANZ LIMITED ; BEESON AND SONS LIMITED COMPAN

Assignee(s): BEESON AND SONS LTD RICKMANSWORTH HERTFORDSHIRE GB ; BISAN EHND SANS LIMITED ; BISAN EHND SANZ LIMITED ; KING WITNEY MILNER ; KING ROGER MILNER ; POWELL ROGER EDWIN ; OFFLEY RODNEY GEORGE ; BEESON AND SONS LIMITED COMPANHIA DE REINO UNIDO ; BEESON AND SONS LILIMITED ; BEESON AND SONS LIMITED

Inventor(s): (std): CROSS ; KING ROGER ; KING ROGER MILNER ; KING ROGER M ; KING WITNEY M ; KING WITNEY MILNER ; OFFLEY RODNEY GEORGE ; OFFLEY RODNEY G ; OFFLEY RODNEY GEORGE ; OFFLEY RODNEY ; POWELL ROGER EDWIN ; POWELL ROGER E ; POWELL ROGER ; RODZHER EDVIN PAUELL ; RODZHER MILNER KING ; RODNI DZHORDZH OFFLEJ ; ROGER MILNER KING ; RODNEY GEORGE OFFLEY ; ROGER EDWIN POWELL

Inventor(s): UITNI MILNER KING ; RODZHER EHDVIN PAUEHLL[GB] ; RODNI DZHORDZH OFFLEJ[GB] ; RODZHER MILNER KING[GB] ; WITNEY MILNER KING ; WITNEY MILNER KING ; RODNEY GEORGE OFFEY ; POWELL ROGER EDWIN MUNDFORD NORFOLK IP26 5HJ GB ; OFFLEY RODNEY GEORGE MOUNT SORREL LEICESTERSHIRE LE12 7EA GB ; ROGER MILNER KING ; KING WITNEY MILNER LATIMER BUCKS HP5 1UL GB ; MILNER KING ROGER ; KING ROGER MILNER LATIMER BUCKS HP5 1UL GB

Agent(s): FREEHILLS PATENT AND TRADE MARK ATTORNEYS; FREEHILLS PATENT ATTORNEYS; FPA PATENT

20) Family number: 42100921 (WO08095368A1)

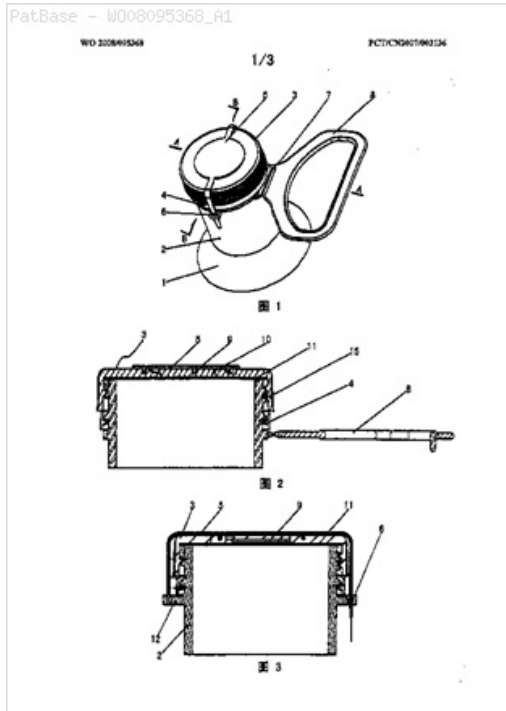
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Title: A DISPOSABLE AND BURGLARY-RESISTING DRINKING WATER BOTTLE

Abstract: A disposable and burglary-resisting drinking water bottle, comprises a bottle body, a body neck, a aluminum foil and a bottle cap, the bottle body is interacted and integrated with the bottle cap, the bottle neck is a part of the bottle body, the bottle cap can be connected with the bottle neck by thread, a lug and a locking band are set on the bottle neck, a center burglary-resisting piece is set on the bottle cap, a burglary-resisting ring is set on the bottom of the bottle cap, the sealing aluminum foil is set on the opening of the bottle neck.

Classifications:

International (IPC 8-9): A47J31/44 B65D1/02 B65D25/28
B65D41/32 B65D47/06 B65D51/18 B65D55/02
B65D85/72 (Advanced/Invention);
A47J31/44 B65D1/02 B65D25/28 B65D41/32 B65D47/06 B65D51/18
B65D55/02 B65D85/72 (Core/Invention)
CPC: B65D23/10 B65D41/3442 B65D55/06
European: B65D23/10 B65D41/34D B65D55/06



Family:

Publication number	Publication date	Application number	Application date
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CN101234688 B	20120627	CN200710026657	20070201
WO08095368 A1	20080814	WO2007CNO3136	20071105

Priority:

CN200710026657 20070201

Probable Assignee: LONGNAN HUAYANG PLASTIC FACTOR

Assignee(s): (std): HE RUIYING ; LONGNAN HUAYANG PLASTIC FACTOR

Assignee(s): LONGNAN HUAYANG PLASTIC FACTORY

Inventor(s): (std): MAI RUNCHENG ; RUNCHENG MAI

Agent(s): GUANGZHOU SINO PATENT AND TRADEMARK AGENT CO LTD

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY
CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN
IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MW MX
MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD
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21) Family number: 41819925 (US2008116162A)

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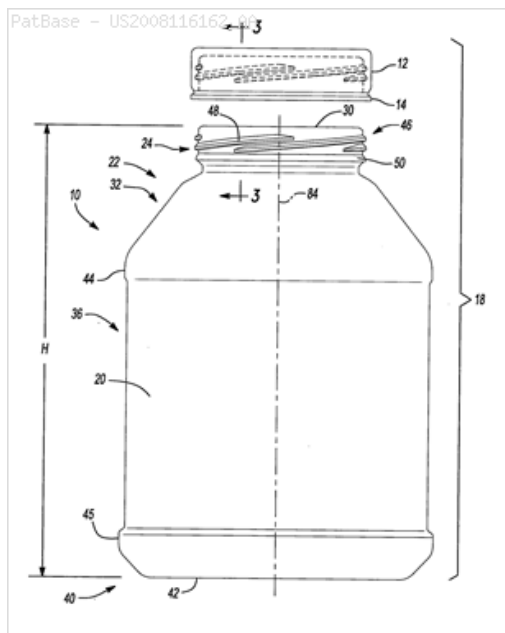
Title: CONTAINER WITH TAMPER EVIDENT BAND

Abstract: A container and a method of making a container are provided. In one example, the container includes a body having an upper portion, a sidewall portion and a base portion. The upper portion includes a blown finish defining a longitudinal axis and an opening into the container. A first portion defines a tamper evident (TE) band formed on the finish and defines a first diameter at an outermost surface. A second portion is formed on the finish, offset toward the base portion relative to the first portion, and defines a second diameter. The second diameter is less than the first diameter. A transition portion is formed between the first and second portions. The transition portion defines an annular taper from the first portion to the second portion.

Classifications:

International (IPC 8-9): B29C49/00 B65D1/02 B65D1/10
B65D23/00 (Advanced/Invention);
B29C49/00 B65D1/00 B65D1/02 B65D23/00 (Core/Invention)
CPC: B29B11/08 B29B11/14 B29B2911/1402 B29B2911/14026
B29B2911/14033 B29B2911/1404 B29B2911/14053 B29B2911/14066
B29B2911/1408 B29B2911/14093 B29B2911/14106 B29B2911/14113
B29B2911/14133 B29B2911/1414 B29B2911/14326 B29B2911/14333
B29B2911/1446 B29B2911/14466 B29C49/06 B29C49/12

B29K2067/00 B29L2031/7158 B65D1/0246 B65D41/3428
European: B65D1/02D1B B65D41/34C1 L29B11/08 L29B11/14
L29B911/14B2B L29B911/14B2D L29B911/14B2F L29B911/14B2H
L29B911/14B4B L29B911/14B4D L29B911/14B4F L29B911/14B4H
L29B911/14B4L L29B911/14B4L2 L29B911/14B4N L29B911/14B4N2
L29B911/14D10D4D4 L29B911/14D10D4F L29B911/14D2
L29B911/14D4 L29C49/06 L29C49/12 L29K67/00 L29L31/7158
US: 215/44 215/44P 264/524 264/524S



Family:

Publication number	Publication date	Application number	Application date
US2008116162 AA	20080522	US20060601863	20061117

Priority:

US20060601863 20061117

Probable Assignee: AMCOR LTD
Assignee(s): (std): PENNY MICHAEL E
Assignee(s): AMCOR LTD
Inventor(s): (std): PENNY MICHAEL E
Agent(s): HARNESS DICKEY AND PIERCE PLC

22) Family number: 1109931 (US3850328A)

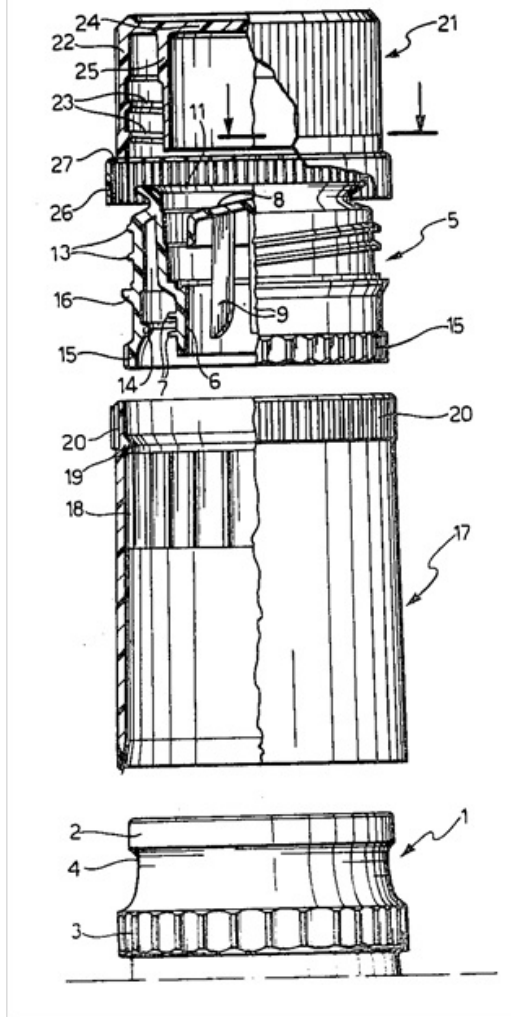
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Title: BOTTLE CLOSURE ARRANGEMENT

Abstract: A closure arrangement with incorporated guarantee seal for the necks of bottles having two spaced annular ridges one of which is toothed, comprising a pourer body snap engageable on one of the annular ridges of the bottle and extending into the neck, a tubular sleeve engageable over the neck of the bottle and overlapping the pourer body to hold it securely in place, and a screw cap engageable on the pourer body and having a toothed band, which engages cooperating teeth on the overlapping part of the tubular sleeve, joined to the cap by a plurality of frangible stalks which form the guarantee seal and which must be ruptured before the cap can be removed.

Classifications:

International (ipc 8-9): B65D41/20 B65D41/34 B65D47/12
B65D55/02 (Advanced/Invention);
B65D41/02 B65D41/34 B65D47/12 B65D55/02 (Core/Invention)
International (ipc 1-7): B65D41/20 B65D41/32 B65D41/34
B65D41/48 B65D47/14 B65D47/40 B65D49/00 B65D55/06 B67B
CPC: B65D47/043 B65D41/3447 B65D41/3409 B65D47/12
B65D47/123 B65D55/02 B65D2101/0038 B65D2101/0076
B65D2255/20
European: B65D41/34A1 B65D41/34D1 B65D47/12 B65D47/12B1
B65D55/02 L65D101/00A3C L65D101/00A5 L65D255/20
US: 215/25.2 215/252

**Family:**

Publication number	Publication date	Application number	Application date
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BR7305717 A0	19740905	BR19730005717	19730727
CA992494 A1	19760706	CA19730176126	19730710
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FR2194618 A1	19740301	FR19730027603	19730727
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JP49044871 A2	19740427	JP19730084849	19730727
US3850328 A	19741126	US19730377380	19730709

Priority:

IT19720069490 19720729

Probable Assignee: GUALA ANGELO

Assignee(s): (std): A DI PERGIACOMO E R GUALA CSAS ; GUALA A GUALA R AND C S AS ; GUALA ANGELO ; GUALA DI PIERGIACOMO E ROBERTO ; GUALA A GUALA R AND C S A S ; GUALA PIERGIACOMO ANGELO ROBER ; GUALA R E C SAS

Assignee(s): GUALA PIERGIACOMO ; GUALA PIERGIACOMO ANGELO ROBERTO IT ; GUALA DI PIERGIACOMO E ROBERTO GUALA C SAS ANGELO ; GUALA PIERGIACOMO ANGELO ROBERTO ; ANGELO GUALA DI PIERGIACOMO E ROBERTO GUALA AND C S A S ; ANGELO GUALA DI PIERGIACOMO E ROBERTO GUALA AND CSAS ; ANGELO GUALA DI PIERGIACOMO E ROBERTO GUALA AND C SAS ; GUALA A GUALA R AND C S A S IT ; ALGELO GUALA DI PIERGIACOMO E ROBERTO GUALA CSAS ; ANGELO GUALA DI PIERGIACOMO ; ANGELO GUALA DI PIERGIACOMO E ROBERTO GUALA AND C

Inventor(s): (std): GUALA P ; GUALA PIERGIACOMO

Inventor(s): GUALA P IT

23) Family number: 22636976 (US6382444B)

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Title: Tamper-evident plastic closure system with snap-on band

Abstract: A tamper evident closure for containers having finish a with thread means and a radially outwardly circumferentially extending bead below the threads comprising, a cap portion of cup-like form having internal threads for cooperatively engaging the threads on a container to apply and remove the cap portion, a retainer ring depending from the lower edge of the skirt portion of the cap and connected thereto by a series of circumferentially spaced bridge connections, and a tamper evident band having means for rotatably mount on the retaining ring and rotatable thereto and including a

series of spring fingers for engaging under the retainer bead on the container when the closure is fully seated.

Classifications:

International (IPC 8-9): B65D41/04 B65D41/34 (Advanced/Invention);

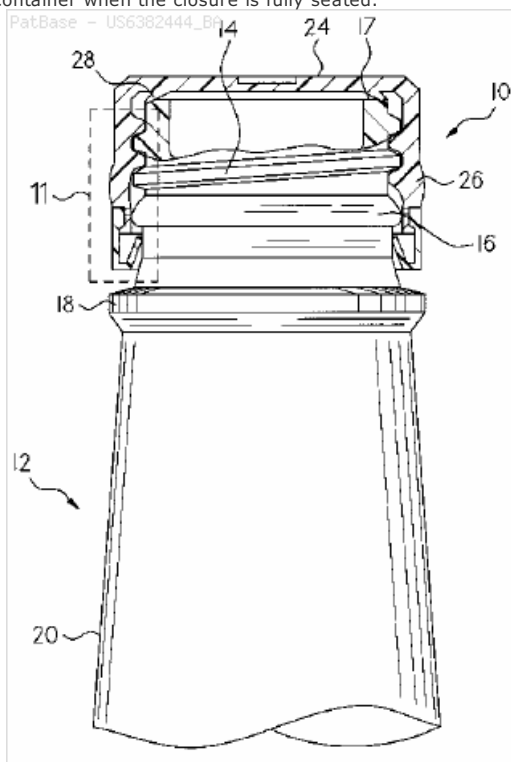
B65D41/04 B65D41/34 (Core/Invention)

International (IPC 1-7): B65D55/02

CPC: B65D41/0471 B65D41/3438

European: B65D41/04E B65D41/34C3

US: 215/218 215/252 215/301 215/334 215/44



Family:

Publication number	Publication date	Application number	Application date
US6382444 BA	20020507	US20000527205	20000316

Priority:

US19990124835P 19990317

US20000527205 20000316

Probable Assignee:

SENTINEL PACKAGING SYSTEMS INC

Assignee(s): (std):

SENTINEL PACKAGING SYSTEMS INC

Inventor(s): (std):

NYMAN HENRY